On Optimal Firewall Rule Ordering

El-Alfy, E.-S.M. Selim, S.Z.;KingFahd Univ. of Pet. & Miner., Dhahran;
Computer Systems and Applications, 2007. AICCSA '07. IEEE/ACS International conference;Publication Date: 13-16 May 2007; ISBN: 1-4244-1031-2
King Fahd University of Petroleum & Minerals

http://www.kfupm.edu.sa

Summary

In today's online connected world, almost all corporate networks use some form of perimeter firewalls to manage Internet connections and enforce a security policy at the corporate gateway. Although it can considerably enhance network security and protect business-critical information, a firewall with thousands of rules can become a bottleneck for network performance. The primary goal of this paper is to present a new rule order optimizer based on simulated annealing to find optimal configurations that minimize the average number of rule comparisons while preserving precedence relationships among disjoint rules. The proposed approach is evaluated and its effectiveness is compared with another approximate solution under several firewall configurations and policy profiles.

For pre-prints please write to:abstracts@kfupm.edu.sa

© Copyright: King Fahd University of Petroleum & Minerals;
http://www.kfupm.edu.sa